Station #1 - Weather measurements help us predict and prepare

The National Weather Service uses weather stations with instruments like these to collect temperature and snowfall information from around the country. We use this information to know when it is safe to spend time outdoors and to know how to prepare and dress for outdoor activities.

1. Current temperature = _____ ^{0}F _____ ^{0}C

2. Minimum temperature last 24 hours = _____ ^{0}F

3. Maximum temperature last 24 hours = _____ ^{0}F

4. Wind speed= _____ mph

5. Using the current temperature (#1) and wind speed (#4) you can determine how cold it feels to your body. This is called the wind chill.

Wind chill= _____ ^{0}F

6. Snowpack is the depth of snow that is on the ground. It has been accumulating all season.

Snowpack = _____ inches

Back at School

We hope you had a great time on your field trip to Glacier National Park! We also hope that you learned something about how snow affects the plants, animals, and people who live in and around Glacier. Fill in the blanks below to help you think about what you learned today.

1. If I were an organism in Glacier National Park, I would be

a _____ because then in winter, when it

snowed, I _____

_____

I could also _____

_____

The snow would help me by _____

_____

_____

The snow would make it harder for me _____

_____

_____

My winter life would be _____

_____.

Station #3 - Snow is our drinking water source

Rangers in Glacier National Park have been conducting snow surveys for over 80 years. The amount of water in the snow pack is important to people since when the snow melts, it flows into the rivers, streams and down into the ground. It's the water we use for our drinking water!

By measuring the amount of water in the snow pack during the winter, resource managers can predict how much water will be available in the summer for crops, livestock, residents, and businesses. Try it!

Work through the steps below to find the snow water equivalent (SWE). This is the depth of water that would cover the ground if all the snow melted right now.

1. Inches outside tube= _____ Inches inside tube _____

2. Weight of snow core and tube = _____lbs

3. Weight of core and tube(#2) - tube weight =snow weight

_____ lbs - 2.50 lbs = _____ lbs

4. Weight of snow (#3) ÷ 0.0652 = SWE (inches of H_2O)

_____ lbs ÷ 0.0652 = SWE (inches of H_2O)

5. Why is the depth of water so much less than the depth of snow? _____

6. How could water melting from snow in a wilderness area like Glacier National Park be more valuable than the water melting from snow in the city?

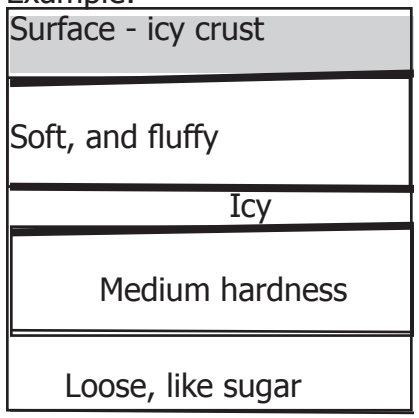
Station #4 - The changing snow pack

Snowflakes on the ground are constantly changing shape because of the temperature, wind, and weight of more snow. The earth naturally gives off heat. This warms the bottom layer of snow and causes the snow crystals next to the ground to grow larger and fit more loosely together.

1. Use your index finger to gently press into the snow in a line from the top of the snow pit all the way to the bottom.

2. Each time you feel the snow change (get harder, icy, or softer, draw a line across the box below and label it).

Example:



Your Snow Pit Profile:

3. Measure the temperatures at the top and bottom.

Top = _____ ^{0}F Bottom = _____ ^{0}F

Which is warmer?_____ Why? _____

4. Many small animals spend the winter living under the snow. How could the changing snowpack affect animals?

_____

_____

Did you know?

Avalanche forecasters dig snowpits and look at the snow layers to predict where and when an avalanche might happen.

Snow Stations
Glacier National Park

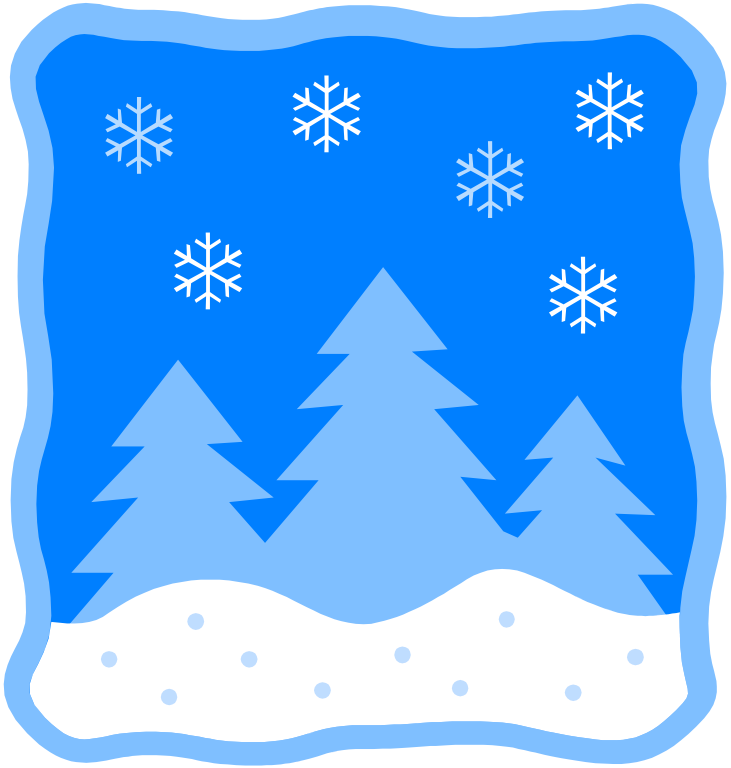
School:_____

Teacher:_____

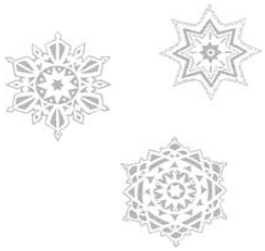
Student Names:_____

_____

Date:_____



Station #5 - Snow and insulation



For many small mammals and insects, the presence of snow cover is very important to their overwintering success. This is because snow is a good insulator - it holds in heat. People use the insulating properties of snow to keep warm by building snow shelters like this quinzhee.

1. Air temperature outside the quinzhee = _____ ^{0}F

2. Air temperature inside when you enter = _____ ^{0}F

3. Stay inside and read the story pages from Who Lives Under the Snow? When you're finished, measure the temperature inside the quinzhee again.

Air temperature inside (after story) = _____ ^{0}F

4. How did all the temperatures compare (outside, inside, after you sat inside for awhile)?

_____

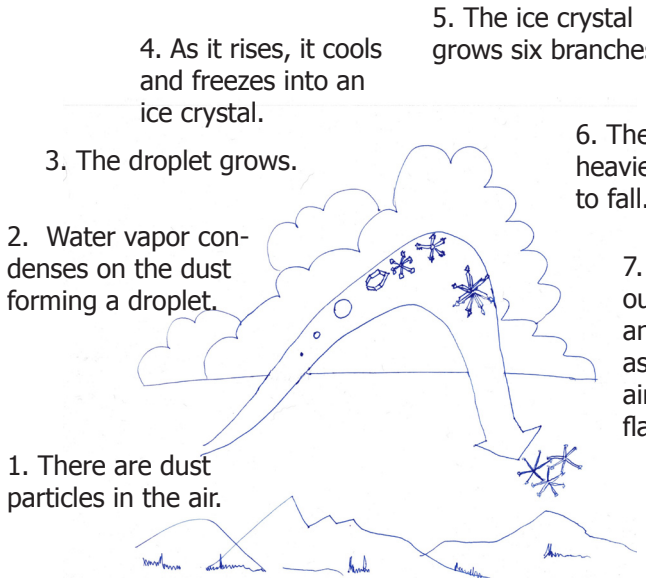
_____

6. What do you think caused the differences?

_____

Did you know?
Scientists have found that with 16-20 inches of snowpack, the temperature at the bottom of the snow (subnivean environment) stays almost a constant temperature, around 32 ^{0}F.

Station #2 - What is snow?



1. Use the magnifying glasses to look closely at one snowflake (placing it on a dark background helps).

2. Compare your snowflake to the pictures on the classification chart. Is it a stellar crystal? Graupel? A plate shape?

3. Draw 3 different snowflakes you observed and label what type you think they are.

Snowflake #1	Snowflake #2	Snowflake #3
_____	_____	_____

Did you know?
When you breathe, you're adding moisture to the air.